

**REMARKS/AMENDMENTS**

Reconsideration of this application is requested. Claims 38, 39 and 41-77 will be pending in the application subsequent to entry of this amendment.

**Amendments to the claims**

Claim 38 has been amended as follows:

- (a) Options (ii) to (v) have been deleted, to focus the claim on siloxane segments, i.e. “invention (i)” as identified in the Restriction Requirement of January 12, 2009 and as elected in the response thereto of February 9, 2009.
- (b) The siloxane segment of “invention (i)” has been further defined such that it must comprise either a linear siloxane of up to 2000 Daltons, a silsesquioxane cage or a partial silsesquioxane cage. Basis for this may be found at e.g. page 15 lines 31-32 and page 17 lines 19-20.
- (c) The claim has also been limited to specify that the siloxane moiety as defined in the claim is attached either directly or via a pendant arm, based on e.g. claims 66 and 74, page 15 lines 22-23, page 17 lines 25-26 and page 18 lines 1-5.
- (d) Further, the pendant arm has been defined to require that it does not contain any ether groups, based on page 32 line 24.
- (e) A further limitation has been introduced to require that when the siloxane moiety is a silsesquioxane group, then the copolymer comprises more polyol segments than pendant group segments. Basis for this may be found at e.g. page 35 lines 5-6.

Claim 40 has been deleted as it became redundant following the amendments to claim 38. As a consequence, claim 74 (which was previously dependent on claim 40) now depends on claim 38.

New dependent claim 77 has been added, which covers the situation where the segments of one or more of options (ii) to (v) of previous claim 38 are present. Although options (ii) to (v) have been deleted from claim 38 (so as to focus claim 38 on the siloxane segments of previous option (i)), it is possible for the siloxane-containing copolymers of claim 38 to also include

segments according to one or more of previous options (ii) to (v) as well. This is clear from original claim 38.

Dependent claims 50 to 57 recite preferred aspects of options (ii) to (v). As those options now appear in claim 77 rather than claim 38, claims 50 to 57 have been amended so as to depend on claim 77 rather than claim 38.

Minor changes have been made to claims 41 and 65 for consistency with new claim 38. Claims 67 and 69 have been revised to amend “obtained or obtainable by” to “obtained by”.

Minor editorial changes have been made to claims 65, 66 and 68.

### **Response to Office Action**

The points raised in the Office Action are discussed below in turn.

#### **Section 1 – Election/Restrictions**

The Examiner indicates that claims 50-57 are withdrawn as being drawn to a non-elected invention. However, the features described in these claims may be taken in combination with elected invention (i), as is clear from e.g. previous claim 38. Accordingly, claims 50-57 have been retained, dependent on new claim 77, and the Examiner is respectfully requested to consider them.

#### **Section 2 – Claim Objections**

The Examiner highlights certain phrases as being grammatically incorrect. The relevant phrases have all been revised to remove the contentious language.

#### **Section 3 – Claim Rejections – 35 USC §112**

The Examiner objects to the definition of “[P]<sub>n</sub>’-[Lys]<sub>n</sub>” in claim 38. Although this part of claim 38 has been deleted, it does now appear in new claim 77. However, the definition has been revised to remove the implication that the terminating group must be a [P] group (seeing as n’ can be zero). As explained at page 30 lines 25-26, in the case where n’ is zero, no P groups are present and the terminal group is a lysine group.

The objection to the phrase “obtained or obtainable by” in claims 67 and 69 has been met by amendment of the phrase to “obtained by”.

Sections 4 and 5 – Claim Rejections – 35 USC §102 (based on Hanada *et al*)

The Examiner objects that Hanada *et al* anticipates, *inter alia*, claim 38. However, claim 38 has now been amended to require the presence of a siloxane moiety attached to the copolymer backbone either directly or via a pendant arm that does not contain any ether groups. Hanada *et al* describes copolymers which feature siloxane polyol components. As is clear from e.g. the abstract of Hanada *et al*, the siloxane moiety is linked to the copolymer via 1 to 250 units of formula  $-(O-CH_2-CH_2)-$  i.e. a pendant arm with at least one but possibly a very large number of ether groups. Accordingly, new claim 38 is clearly novel over Hanada *et al*.

Further, claim 38 would not have been obvious to a person having ordinary skill in the art in view of Hanada *et al*. Hanada *et al* relates to polyurethane resins for use in thermal recording materials. The disclosure of Hanada *et al* therefore bears no relation to the present invention which is directed to polymers for use as implantable devices in medical applications. The skilled person therefore would not have been motivated to use, let alone to modify, the polymers described in Hanada *et al* in the context of the present invention. In addition, as discussed above, Hanada *et al* teaches the use of siloxane components in copolymers, wherein the siloxane moiety is linked to the rest of the copolymer via a polyol chain (i.e. a chain comprising ether groups). No alternative type of linkage is even mentioned. Rather, Hanada *et al* makes it clear that the polyol component is crucial to the copolymers, see e.g. page 6 lines 33-37: “so long as the above-described components are contained as essential components, a coating formulation adapted to form a heat layer may contain auxiliary components...” (emphasis added). Thus, a person of ordinary skill in the art would simply not have contemplated dispensing with the essential polyol component, for fear of compromising the properties of the copolymer of Hanada *et al*. New claim 38 is therefore not obvious from Hanada *et al*.

Section 6 – Claim Rejections – 35 USC §102 (based on Sahatjian *et al*)

The Examiner objects that the silsesquioxane-containing copolymers described in Sahatjian *et al* (US 2005/0010275) anticipate, *inter alia*, claim 38. However, new claim 38 has

been amended to require that when the siloxane moiety is either a silsesquioxane cage or a silsesquioxane partial cage, then the copolymer comprises more polyol segments than pendant group siloxane segments. This renders claim 38 novel over Sahatjian *et al.*

As noted by the Examiner in the third paragraph on page 6 of the Office Action, paragraph [0131] of Sahatjian *et al* indicates what variation is possible for the ratio of siloxane-containing segments to polyol containing segments. The ratio is expressed as X/Y, wherein X is the number of siloxane-containing segments and Y is the number polyol-containing segments. The range given for X/Y is 1 to 20, i.e. there must be at least as many siloxane segments as polyol segments, and generally there are many more siloxane segments than polyol segments. Thus, the requirement in claim 38 that the opposite must be true, i.e. that there must be more polyol components than siloxane components, renders claim 38 novel over Sahatjian *et al.*

Further, claim 38 would not have been obvious to a person of ordinary skill in the art in view of Sahatjian *et al.* As is explained in the attached Declaration from Arnold Darbyshire, Sahatjian *et al* mentions the use of silsesquioxane-containing groups as chain extenders to provide rigidity in the final polymer structure. The silsesquioxane groups are one of a number of possible chain extenders which are mentioned by Sahatjian *et al* and there is no indication in this reference that the silsesquioxane ring itself has any significance in terms of the properties which it provides to the polymer. The skilled person would therefore not be motivated to select and modify the silsesquioxane-containing polymers over the numerous other potential chain extenders which are mentioned. There is certainly no indication that the silsesquioxane can be used other than as a chain extender.

In addition, Sahatjian *et al* is concerned with providing stents to prevent the urethra being squashed by an enlarged prostate and so has a particular requirement for stiff and rigid stents. For this reason, the bulky chain extender component, which may be a silsesquioxane-containing group, is present in a large amount and there is a greater presence of the bulky silsesquioxane-containing segment than of the smaller polyol-containing segment. In contrast, in the present invention, more flexible polymers are required as described in the first few paragraphs of the background of the invention section of the specification. The polymers described by Sahatjian *et al*, which are stiff and rigid, would perform poorly in the context of the present invention since their rigidity would lead to poor compliance. The skilled person therefore would not consider

the use of the Sahatjian *et al* polymers in the context of the present invention, let alone the modification of the polymers taught by Sahatjian in a manner which ignores the teaching of Sahatjian *et al* itself (paragraph [0131]). The skilled person would certainly not be motivated to reduce the amount of silsesquioxane-containing segment to the minority, since this would go against an essential requirement of Sahatjian *et al*. Accordingly, the skilled person would not have been motivated to produce polymers as defined in present claim 38 on the basis of Sahatjian *et al*.

Sections 7-12 – Claim Rejections – 35 USC §103

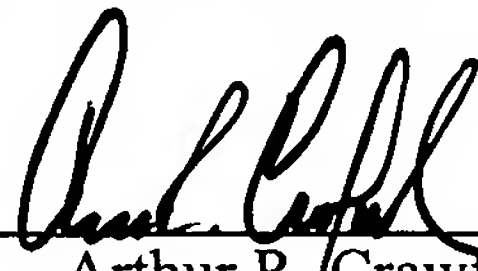
The Examiner objects that claims 38, 49, 58-59, 64, 70-72 and 75 would have been obvious based on Sahatjian *et al* either alone or in combination with Pinchuk *et al* (US 4,739,013). However, as explained above, the copolymers of new amended claim 38 filed herewith are both novel and also not obvious from Sahatjian *et al*. Pinchuk *et al* does not fill the gap between Sahatjian *et al* and new claim 38, as it fails to teach copolymers with less silsesquioxane segments than polyol segments. Indeed, given that the copolymers of new claim 38 are novel and not obvious from Sahatjian *et al*, Pinchuk *et al* is now essentially irrelevant, because as acknowledged by the Examiner in Section 12 of the Office Action, Pinchuk *et al* does not teach the copolymer of claim 38. Thus, there is no way that these two documents could have led a person of ordinary skill in the art to a copolymer of claim 38.

Favorable reconsideration of this application is respectfully requested.

Respectfully submitted,

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